

19070

**BACHELOR IN COMPUTER  
APPLICATIONS**

**Term-End Examination**

**December, 2010**

**CS-63 : INTRODUCTION TO SYSTEM  
SOFTWARE**

*Time : 2 hours*

*Maximum Marks : 60*

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*Note : Question No. 1 is compulsory. Attempt any three questions from the rest.*

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1. (a) What are the functions of loaders ? Explain 7  
various categories of loaders schemes. Also,  
Give an example to explain the  
implementation of an absolute loader.
- (b) Consider a disk queue with requests 8  
involving tracks to read:-100, 200, 55, 50,  
150, 25, 155, 60, 70, 85. The start track to  
read is 100 and last track is 85. Apply SSTF  
and SCAN algorithms and explain.  
Assuming moving arm is on cylinder 50.
- (c) Give a note on the following :- 6  
(i) ex, ed editors.  
(ii) Booting process in UNIX.

- (d) Define page fault in page on demand scheme and find out the no. of page faults by using FIFO & LRU page Replacement algorithm for the following sequence. 7, 1, 1, 5, 4, 0, 1, 7, 4, 3, 7, 0, 5. 9
2. (a) Write a shell program to generate the average and percentage of marks of a student secured in 5 subjects. Also display the results. Make suitable assumptions, wherever necessary in the question. 5
- (b) Compare and contrast the features of paging and segmentation. 5
3. (a) Explain the purpose of following commands in UNIX with an example of each : 5x1=5
- (i) cat
  - (ii) mail
  - (iii) echo
  - (iv) cc
  - (v) what
- (b) Explain a deadlock prevention algorithm using an example. 5
4. (a) Explain compaction in memory management and its advantages. Also, give an example. 5
- (b) Give a solution to 'dining philosophers problem' using semaphores. 5

5. (a) Generate a parse tree for the expression  $a*b+c$  based on a grammar for an arithmetic expression. 4
- (b) Differentiate between :- 4
- (i) Subroutine and function.
- (ii) Compiler and interpreter.
- (c) Give the functional components of Macintosh Toolbox. 2
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